

BIOGRAPHICAL SKETCH

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NAME Deutch, Ariel Y.		POSITION TITLE Professor of Psychiatry and Pharmacology	
eRA COMMONS USER NAME (credential, e.g., agency login) deutchay			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Vanderbilt University	BA	1973	Psychology
University of Georgia	PhD	1983	Psychology
Yale University School of Medicine	Post-doc	1983-1986	Neuropharmacology

A. Positions and Honors

Positions and Employment

1986-1987 Associate Research Scientist, Departments of Pharmacology and Psychiatry, Yale Univ. Sch. Medicine
 1987-1992 Assistant Professor, Department of Psychiatry, Yale University School of Medicine
 1992-1996 Associate Professor, Departments of Psychiatry and Pharmacology, Yale Univ. Sch. Medicine
 1997-pres Professor, Departments of Psychiatry and Pharmacology, Vanderbilt University School of Medicine, Investigator, John F. Kennedy Center for Research on Human Development, Director, National Parkinson Foundation Center of Excellence at Vanderbilt University

Other Experience and Professional Memberships

1998-2003 Chair, MDCN-5 (Molecular Pharmacology and Signaling) Research Review Committee, NIH
 1995-1997 Member, Neuropharmacology and Neurochemistry Research Review Committee, NIMH
 1993-1994 Member, Behavioral Neuroscience Research Review Committee, NIMH
 1991-1993 Member, Small Business Research Review Committee, NIMH
 1995-pres Member, Scientific Council, NARSAD
 1989-pres Chair, Scientific Advisory Board, National Parkinson Foundation
 1991-pres Fellow, American College of Neuropsychopharmacology
 1990-pres Editorial Boards: Neuropsychopharmacology (1995-1999; 2001-present. Deputy Editor), Journal of Chemical Neuroanatomy (1996-present), Cerebral Cortex (1991-1995), Journal of Pharmacology and Experimental Therapeutics (1998-1999), Parkinsonism and Related Disorders (1999-present, Associate Editor, North America)

B. Selected peer-reviewed publications (in chronological order)

Salvatore MF, Garcia-Espana A, Goldstein M, Deutch AY, Haycock JW (2000) Stoichiometry of tyrosine hydroxylase phosphorylation in the nigrostriatal and mesolimbic *in vivo*: effects of acute haloperidol and related compounds. *J Neurochem* 75:225-232.
 Bubser M, Deutch AY (2000) Thalamic paraventricular nucleus projections: Source of the calretinin innervation of the nucleus accumbens shell. *Eur J Neurosci* 12:1591-1598.
 Scruggs JL, Patel S, Bubser M, Deutch AY (2000) DOI-induced activation of cortical neurons occurs via 5-HT_{2A} heteroceptors located on thalamocortical glutamatergic projections. *J Neurosci* 20:8846-8852.
 Bubser M, Backstrom JR, Sanders-Bush E, Roth B, Deutch AY (2001) Localization of the serotonin 5-HT_{2a} receptor in striatal afferents. *Synapse* 39:297-304.
 Dobner PR, Fadel J, Deitemeyer N, Carraway RE, Deutch AY (2001) Neurotensin knock-out mice show an altered response to antipsychotic drugs. *Proc Natl Acad Sci USA* 98:8048-8053.

- Bubser M, Deutch AY (2002) Differential effects of typical and atypical antipsychotic drugs on striosome and matrix compartments of the striatum. *Eur J Neurosci* 15:713-720.
- Woo N-S, Lu J, England R, McClellan R, Dufour S, Mount DB, Deutch AY, Lovinger DM, Delpire E (2002) Hyperexcitability and epilepsy associated with disruption of mouse neuronal-specific K-Cl cotransporter gene. *Hippocampus* 12:458-468.
- Fadel J, Deutch AY (2002) Anatomical substrates of orexin-dopamine interactions: Lateral hypothalamic projections to the ventral tegmental area. *Neurosci* 111:379-387.
- Fadel J, Bubser M, Deutch AY (2002) Differential activation of orexin neurons by antipsychotic drugs associated with weight gain. *J Neurosci* 22:6742-6746.
- Scruggs JL, Schmidt D, Deutch AY (2003) The hallucinogen DOI increases cortical extracellular glutamate levels. *Neurosci Lett* 346:137-140.
- Gu G, Deutch AY, Levy S, Franklin J, Wallace DZ, Zhang J (2003) Profiling genes related to mitochondrial function in mice treated with N-methyl-4-phenyl-1,2,3,6-tetrahydropyridine. *Biochem Biophys Res Comm* 308:197-205.
- Rieck RW, Ansari MS, Whetsell WO Jr, Deutch AY, Kessler RM (2004) Distribution of dopamine D₂-like receptors in the human thalamus: autoradiographic and PET studies. *Neuropsychopharmacol* 29:362-372.
- Wang H-D, Dunnavant FD, Jarman T, Deutch AY (2004) Effects of antipsychotic drugs on neurogenesis in the forebrain of the rat. *Neuropsychopharmacol* 29:1230-1238.
- Petrie KA, Bubser M., Young CD, Davis MD, Roth BL, Deutch AY (2004) The neurotensin agonist PD 149163 increases Fos expression in the prefrontal cortex of the rat. *Neuropsychopharmacol* 9:1878-88.
- Zaja-Milatovic S, Milatovic D, Schantz AM, Zhang J, Montine KS, Samii A, Deutch AY, Montine TJ (2005) Dendritic degeneration in neostriatal medium neurons in Parkinson's disease. *Neurol* 64:545-547.
- Petrie KA, Schmidt D, Bubser M, Fadel J, Carraway RE, Deutch AY (2005) Neurotensin mediates dopamine D₂ agonist-evoked activation of GABAergic interneurons in the prefrontal cortex. *J Neurosci* 25:629-1636.
- Bubser M, Fadel J, Jackson L, Meador-Woodruff J, Jing D, Deutch AY (2005) Dopaminergic regulation of orexin neurons. *Eur J Neurosci* 21:2993-3001.
- Brown AM, Deutch AY, Colbran RJ (2005) Dopamine depletion alters phosphorylation of striatal proteins. *Eur J Neurosci*, 22:247-256.
- Deutch AY, Winder D (2006) A channel to neurodegeneration. *Nature Med* 12:17-18.
- Day M, Wang Z, Deng J, An X, Ingham CA, Schering AF, Wokosin D, Ilijic E, Sun Z, Sampson AR, Mugnaini E, Deutch AY, Sesack S, Arbuthnott G, Surmeier DJ (2006) Selective elimination of glutamatergic synapses on striatopallidal neurons in Parkinson disease models. *Nature Neurosci* 9: 251-259.
- Sheffler DJ, Kroeze WK, Garcia BG, Deutch AY, Brüning JC, Roth BL (2006) p90 ribosomal S6 kinase 2 exerts a "tonic brake" on G protein-coupled receptor signaling. *Proc Natl Acad Sci USA* 103:4717-4722.
- Fadel J, Dobner PR, Deutch AY (2006) Amphetamine-elicited striatal Fos expression is attenuated in neurotensin null mutant mice. *Neurosci Lett* 402:97-101.
- Hackler EA, Turner GH, Gresch PJ, Sengupta S, Deutch AY, Avison MJ, Gore JC, Sanders-Bush E (2007) 5-HT_{2C} receptor contribution to m-chlorophenylpiperazine and N-methyl-beta-carboline-3-carboxamide-induced anxiety-like behavior and limbic brain activation. *J Pharmacol Exp Ther*, 320:1023-1029.
- Mathur BN, Neely DM, Deutch AY (2007) Systemic administration of a proteasome inhibitor does not cause parkinsonism. *Brain Res* 1168:83-89.
- Neely MD, Schmidt DE, Deutch AY (2007) Cortical regulation of dopamine depletion-induced dendritic spine loss in striatal medium spiny neurons. *Neuroscience* 149:457-64.
- Deutch AY and Bubser M (2007) The orexins/hypocretins and schizophrenia. *Schiz Bull* 33:1277-1283.
- Deutch AY, Colbran RJ, Winder DJ (2007) Striatal plasticity in parkinsonism and medium spiny neuron dendritic remodeling in parkinsonism. *Parkinsonism and Related Disorders* 13:S251-258.
- Wang H-D, Deutch AY (2008) Dopamine depletion of the prefrontal cortex induces dendritic spine loss and its reversal by atypical antipsychotic drug treatment. *Neuropsychopharmacol* 33:1276-86.
- Andersson M, Groseclose MR, Deutch AY, Caprioli RM (2008) 3D Imaging mass spectrometry of brain proteins and peptides in rat brain. *Nature Methods*. 5:101-108.
- Clark JA, Flick RB, Pai L-Y, Szalayova I, Key S, Conley RK, Deutch AY, Hutson PH, Mezey E (2008) Glucocorticoid modulation of tryptophan hydroxylase-2 protein in raphe nuclei and 5-hydroxytryptophan concentrations in frontal cortex of C57/Bl6 mice. *Mol Psychiatr*. 13:498-506.(doi: 10.1038/sj.mp.4002041).
- Mathur B, Deutch AY (2008) Rat meningeal and brain microvasculature pericytes co-express the vesicular glutamate transporters 2 and 3. *Neurosci Lett*. 43590-94.
- Wang, H-D, Deutch AY (2008) Dopamine depletion of the prefrontal cortex induces dendritic spine loss and its reversal by atypical antipsychotic drug treatment. *Neuropsychopharmacol* 33:1276-86.

Jones CK, Brady AE, Davis AA, Xiang Z, Bubser M, Tantawy MN, Kane A, Bridges TM, Kennedy JP, Bradley SR, Peterson TE, Baldwin RM, Kessler R, Deutch AY, Levey AI, Lindsley CW, Conn PJ. (2008). Novel selective allosteric activator of the M1 muscarinic acetylcholine receptor reduces amyloid processing and produces antipsychotic-like activity in rats. *J. Neurosci.* 28:10422-10433.

Lieberman JA, Bymaster FP, Meltzer HY, Deutch AY, Duncan GE, Marx CE, Aprille JR, Dwyer DS, Li X-M, Mahadik SP, Duman RS, Porter JH, Modica-Napolitano JS, Newton SS, Csernansky JG, Kollack-Walker S. (In Press) Antipsychotic drugs: Comparison in animal models of efficacy, neurotransmitter regulation and neuroprotection. *Pharmacol Rev.*

C. Research Support

Ongoing Research Support

R01 MH077298-01 Deutch (PI) 12/15/06-11/30/09
NIH/NIMH
Dopaminergic Regulation of Pyramidal Cells
This project focuses on the mechanisms underlying dendritic reorganization of prefrontal cortical neurons in schizophrenia
Role: PI

P01 NS44282 Deutch (PI) 07/01/02-11/30/13 (no-cost extension)
NIH/NINDS
Dendritic Plasticity in Parkinson's Disease
Studies are directed at determining the mechanisms that subserve dendritic remodeling in striatal medium spiny neurons in Parkinson's Disease and develop novel interventions to prevent dendritic spine loss.
Role: PI

National Parkinson Foundation Deutch (PI) 07/01/07-06/30/09
NPF Center of Excellence
This award is to establish and operate an outreach program and foster basic and clinical research in Parkinson's Disease
Role: PI

U54 NS04071 Rucker (PI) 09/01/06-09/31/11
NIH/NINDS
SNRP Project at Meharry Medical College
Collaboration between Meharry Medical College and Vanderbilt University Medical Center for senior Vanderbilt investigators to mentor junior Meharry faculty, the project focusing on 5-HT_{2A} receptors in Parkinson's Disease.
Role: Co-Investigator

S11 ES014156 Aschner (PI) 09/18/06-06/30/08
NIH/NIEHS
Molecular Mechanisms of Polycyclic Aromatic Hydrocarbon Toxicity
This ARCH application proposes a project between Meharry Medical College and Vanderbilt University that focuses on enhancing collaborations between investigators at these institutions in the general area of toxicity.
Role: Co-Investigator

P50 MH078028 Blakely (PI) 12/01/07-11/30/12
NIH/NIMH
Genes Controlling Assembly and Function of Serotonin Systems
This Conte Center award focuses on the role of serotonergic systems in major neuropsychiatric illness
Role: Co-Investigator

Completed Research Support

None